

Biobased coatings for composites; Building a Biocomposite Bridge

Nabasco - Bio Composites

14 November 2018

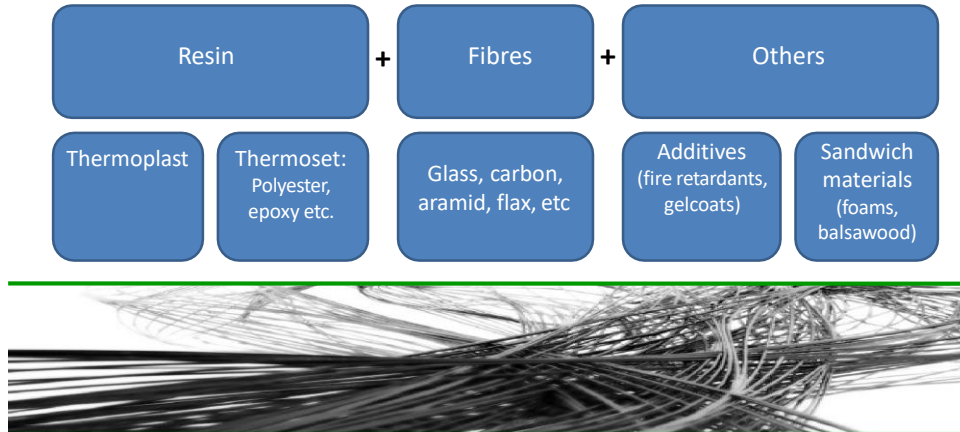


- NPSP and Nabasco!
- Production technology
- Steps towards a whole
- Production
- Evaluation

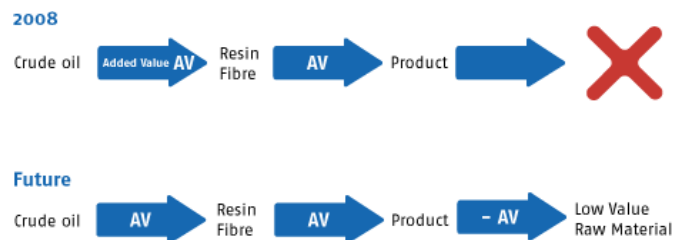


Composites are fibre reinforced plastics

Fibres give strength, the resin protects and keeps in shape



... but do have a disadvantage



Our vision:

Bio based composites are the future low CO₂ material

Biomass



Biocomposites



We are: NPSP B.V.



We are: NPSP B.V.



Complete Façades



Canopy Provinciehuis Haarlem



ANWB road sign



Pastoe design chair



Bio based Tree pots for Dijon



Street Furniture



Biobased Façade



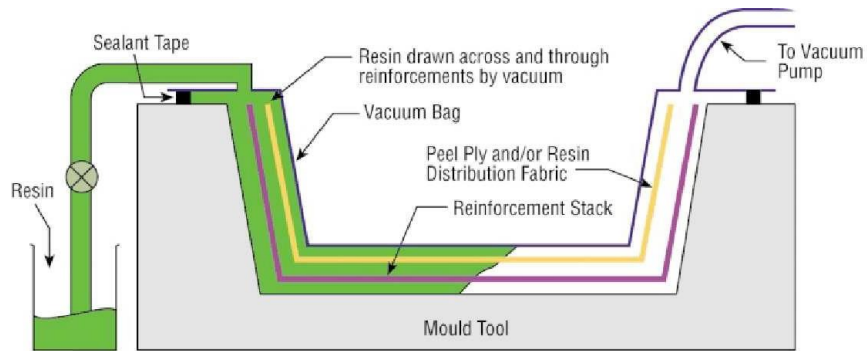
BioBased Bridge



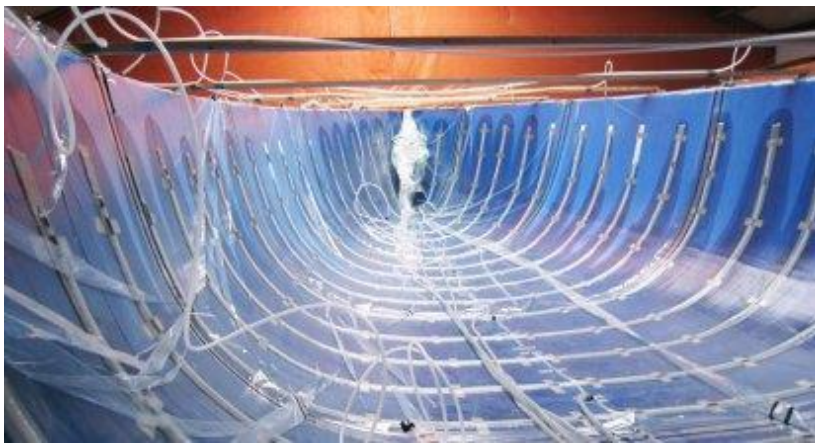
Production Technology

1. Vacuüm injection
2. No Mould
3. Co-operation with education (TUE, TUD, Avans, HZ, ROC, VMBO)
4. In Rosmalen
5. As biobased as possible (100% biobased composites/ high percentage of biobased content).

Vacuum infusion



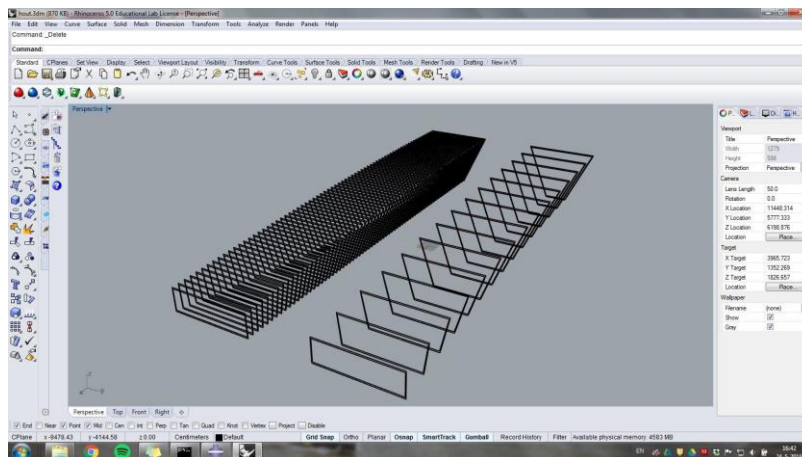
Vacuum infusion



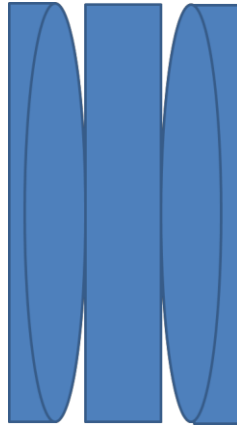
Steps towards a whole

1. Only support ramp (mould)
2. Shaping the core
3. Positioning inserts (wood, cork, composite prefab parts)
4. Protecting the core
5. Wrapping the core and inserts in fibre mats
6. Placing injection hoses and support materials
7. Injection!
8. Mounting and finishing

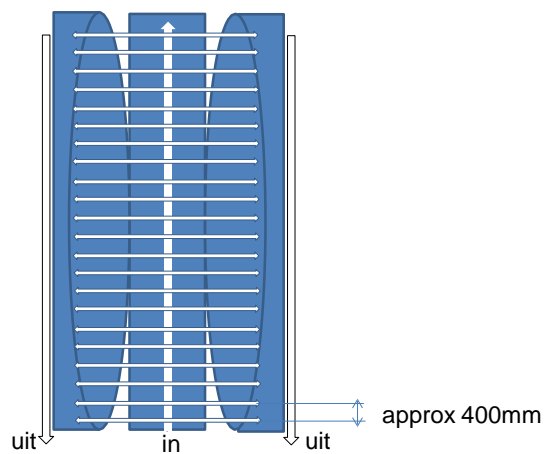
Shaping the core



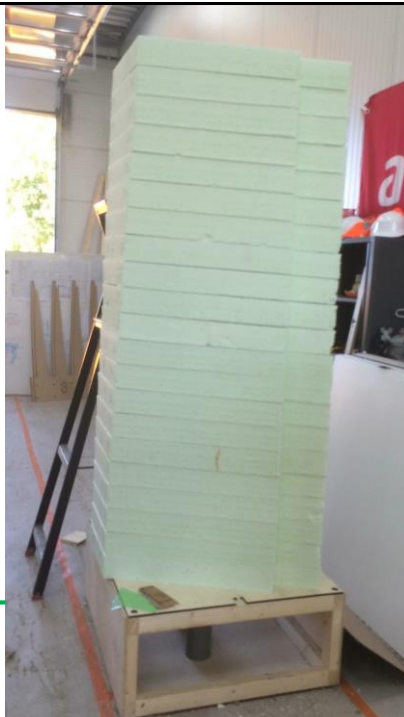
Injection strategy

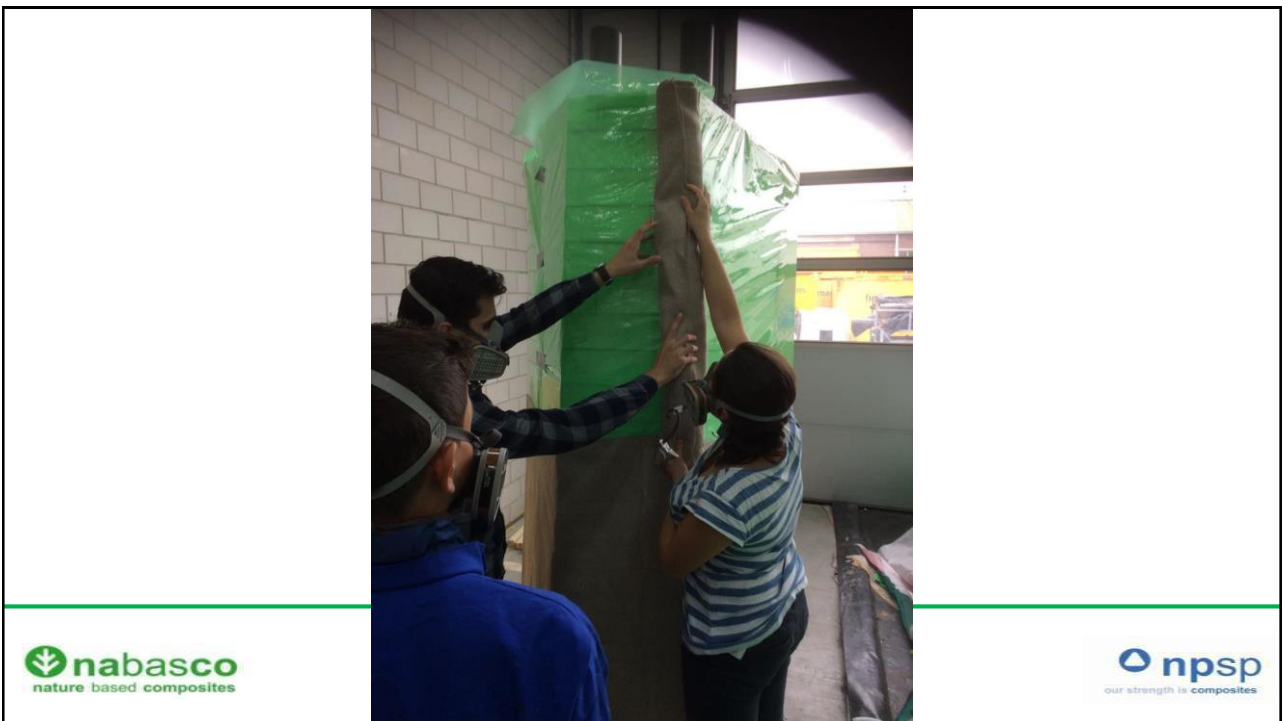


Injection Strategy 2



Production









 **nabasco**
nature based composites

 **npsp**
our strength is composites



 **nabasco**
nature based composites

 **npsp**
our strength is composites



 **nabasco**
nature based composites

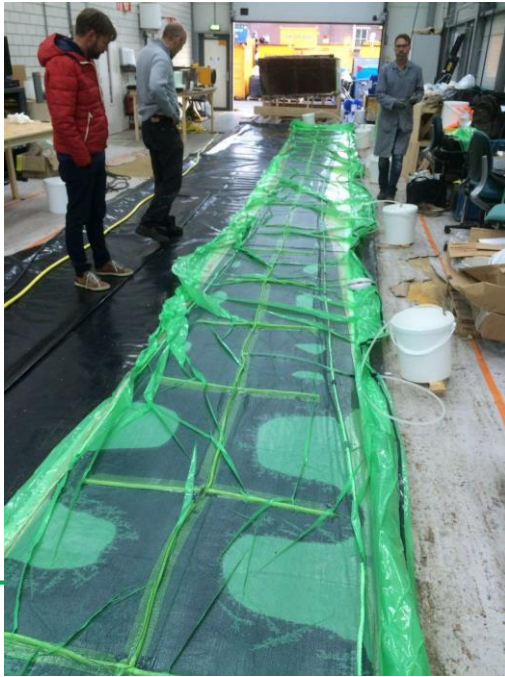
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Evaluation

- More than 100 students from 6 institutions involved!
- It is possible to build a bridge out of biocomposites
- Choice for biobased materials complicated production
 - PLA foam has low melting temp
 - Greenpoxy bio resin has high exotherm peak temperature



Evaluation

- Commercialisation of biobased resins is needed
 - Increase demand
 - Legislation
 - Also smaller percentage biobased can be step forward
- Wider range of types of biobased resins is necessary (infusable, UP, slow curing, fast curing, water as solvent, non water solvent etc.)
- **Biobased coating -> Not available**
- Biobased glue -> Not available
- Gap between 75% and 100% can be closed



Questions or suggestions?

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